

**NEW DISTRIBUTION RECORD OF THE
FORMOSAN SUBTERRANEAN TERMITE,
COPTOTERMES FORMOSANUS (ISOPTERA:
RHINOTERMITIDAE), IN AUBURN, ALABAMA¹**

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ABSTRACT: The Formosan subterranean termite, *Coptotermes formosanus*, is reported from Auburn, AL. Termites were found inhabiting old railroad cross-ties that were placed on the ground as flower bed borders. All previous reported occurrences of *C. formosanus* in the continental United States have been very close to ports or major inland waterways. The approximate proportion of workers to soldiers was 6:1. The presence of swarmers indicated the colony was mature.

The Formosan subterranean termite, *Coptotermes formosanus* Shiraki is an important pest in tropical and subtropical areas such as Taiwan, and the Philippines (Oshima, 1919), Guam (Hromada, 1970), and Hawaii (Ehrhorn, 1946; Higa, 1981). In the continental United States, this species has previously been recorded only in the Southeast in areas near ports or near large inland waterways. *C. formosanus* has been discovered in Houston and Galveston, TX; Baton Rouge, Lake Charles and New Orleans, LA; Biloxi and Meridian, MS; Mobile, AL; Hallandale, Orlando and Gulfbreeze, FL; Charleston, SC; and Memphis, TN (Su and Scheffrahn, 1986). Aging railroad ties have been reported to be attacked by *C. formosanus* (Spink, 1967). Herein, we report the presence of alates, nymphs, and workers of *C. formosanus* in a previously undocumented location, Auburn, AL (32°36'N, 85°29'W), which is 26 km from the nearest inland waterway.

Alates of *C. formosanus* were observed swarming near lights on the Auburn University campus at approximately 2100 h CDT on 4 June 1987 (N.R. Holler, pers. comm.). Rain had fallen one day previously. On 20 July 1987 we unearthed railroad ties which had been buried ca. 10 cm deep in soil for about 3 years ca. 75 m away from the swarming site. Worker and soldier *C. formosanus* were observed in the ties and in the soil immediately below them to a depth of approximately 3 cm below the ties.

A laboratory colony of workers and soldiers of *C. formosanus* has been kept in Funchess Hall at Auburn University since July 1986, which is 11 months before observation of alates. Alates, workers and soldiers of *C.*

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formosanus could not have been produced by this laboratory colony, since it contained no alates or reproductives.

Higa (1981) obtained alate reproductives after 11 years in colonies initiated with paired reproductives, but stated that he thought alate reproductives could appear within 5 or 6 years in field colonies. The existence of alate reproductives, therefore, indicates a mature *C. formosanus* colony, at least 5 or 6 years old (Higa, 1981). Since the ties had been in this location for only three years, the termites probably invaded the ties before they were buried. The ties had been obtained from a lumberyard in Lafayette, AL. The lumberyard, in turn, had probably obtained the ties from a wholesaler in the Montgomery, AL area; the wholesaler had gone out of business. The presence of alates is considered to represent an established infestation of *C. formosanus* (Su and Scheffrahn, 1986). Thus, our observations indicate a successful establishment of *C. formosanus* in Auburn, AL.

Four *C. formosanus* infested ties were taken to the laboratory, sectioned, and were destructively sampled. Sampling was intended to be representative, rather than exhaustive, so, numbers reported indicate observed ratios of termite stages, rather than absolute numbers of termites present in the railroad ties. Of a sample of 3593 termites, 497 (13.83%) were soldiers, 3094 (86.11%) were workers, and 2 (0.06%) were prealates. Soldiers comprised 9.7 to 10.1% of young *C. formosanus* colonies (Higa, 1981).

C. formosanus may have been introduced to the southeastern United States with infested material in ships returning from the Pacific theater at the end of World War II (Jones and LaFage, 1980). Subsequent infestations, such as the one in Auburn, AL, probably originated through human transport of infested wood products. The recent increase in the number of localities where *C. formosanus* is reported probably reflects heightened interest in this species rather than any increase in dispersion (Su and Scheffrahn, 1986). There are no federal quarantines of *C. formosanus*, partly due to lack of effective detection and eradication measures, and so the responsibility for preventing the spread of *C. formosanus* lies with transporters and users of wood products.

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